

PRELIMINARY REPORT INDUSTRY SERIES

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1982 Census of Mineral Industries

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OIL AND GAS FIELD SERVICES (Industries 1381, 1382, and 1389)

This report presents preliminary statistics from the 1982 Census of Mineral Industries. The 1982 data are subject to change in the final reports, which will be issued at a later date. Final data will be presented first in paperbound reports and then in a bound volume of Subject, Industry, and Geographic Area Statistics. The final volume will include a comprehensive discussion of the concepts and definitions used in the census.

The total value of shipments and receipts for Industry 1381, Drilling Oil and Gas Wells, was \$14,220 million in 1982, while the value of shipments of products classified as being primary to this industry was \$14,324 million. Value added by mining was \$11,606 million. Total employment for the industry increased to 166 thousand employees in 1982, an increase of approximately 109 percent from 1977. Establishments in this industry are those primarily engaged in drilling wells for oil and gas field operations for others on a contract, fee, or similar basis. The industry includes contractors that specialize in spudding in, drilling in, redrilling, and directional drilling.

The total value of shipments and receipts for Industry 1382, Oil and Gas Field Exploration Services, was \$2,936 million in 1982, while the value of shipments of products classified as being primary to this industry was \$2,833 million. Value added by mining was \$2,293 million. Total employment for the industry increased to 41 thousand employees in 1982, an increase of approximately 129 percent from 1977. Establishments in this industry are those primarily engaged in performing for others on a contract, fee, or similar basis, geophysical, geological, and other exploration services for oil and gas.

The total value of shipments and receipts for Industry 1389, Oil and Gas Field Services, N.E.C., was \$14,353 million in 1982, while the value of shipments of products classified as being primary to this industry was \$14,290 million. Value added by mining was \$11,252 million. Total employment for the industry increased to 197 thousand employees in 1982, an increase of approximately 99 percent from 1977. Establishments in this industry are those primarily engaged in performing oil and gas field services, not elsewhere classified, for others on a contract, fee, or similar basis, such as excavating slush pits and cellars; grading and building of foundations at well locations; well surveying; running, cutting, and pulling casings, tubes, and rods; cementing wells; shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells.



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Establishments classified in industries 1381, 1382, and 1389 were required to submit one report covering all oil and gas field service operations performed in the United States. These reports were classified on the basis of the principle type of service performed and the principal industry served to determine their industry classification. Each report included data on the amount received for services by State and county. For geographic area statistics, all figures in each respondent report were allocated on the basis of these reported data.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹ The industry statistics (employment, payroll, value of shipments and receipts, cost of supplies, etc.) are reported for each establishment as a whole. Industry aggregates of these data measure not only the primary activities of the establishments, which determine their industry classification, but also all secondary activities performed by the same establishments. This fact should be taken into account in comparing industry statistics (tables 1, 2, 4a, and 4b) with product statistics (table 3) showing shipments by all industries of the primary products of the specified industry. (See appendix for a discussion of the difference between value of shipments and receipts for the industry and value of product shipments.) All dollar figures shown in this report are in current dollars for the years specified and have not been adjusted for changes in price levels. Therefore, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The methods of data collection which include the use of administrative-record data are discussed in detail in the appendix. Small single-unit companies (the cutoff varied by industry) were not mailed a questionnaire. For these establishments (and a small number of larger establishments whose reports were not received at the time of tabulation), some employment, payroll, and receipt data were obtained from administrative records of other government agencies. These data were then used in conjunction with industry averages to estimate the statistics for the administrative-record and nonresponse establishments.

Single-unit establishments in the drilling oil and gas wells industry with less than 5 employees were not mailed questionnaires; for the oil and gas field exploration services industry this cutoff was 4 employees; and for the oil and gas field services, n.e.c., industry it was 5 employees. These establishments in the drilling oil and gas wells industry accounted for 1 percent of the total value of shipments and receipts; in the oil and gas exploration services industry they accounted for 3 percent; and in the oil and gas field services, n.e.c., industry they accounted for 2 percent.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

The following abbreviations and symbols are used in the tables in this publication:

-	Represents zero.
(D)	Withheld to avoid disclosing data for individual companies.
(NA)	Not available.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
(X)	Not applicable.
(Z)	Less than half the unit shown.
n.e.c.	Not elsewhere classified.
n.s.k.	Not specified by kind.
r	Revised.
SIC	Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, and bbl, are used in the customary sense. Where the term "tons" only is used, it refers to short tons of 2,000 pounds; where the figures are expressed in tons of 2,240 pounds, the unit of measure is specified as "long tons" or "l. tons."

Table 1. Historical Industry Statistics: 1982 and Earlier Years

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Year	Companies (number)	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts ¹ (million dollars)	Value of net ship- ments and receipts ¹ (million dollars)	Quantity of primary products	Capital expendi- tures (million dollars)
		Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY GROUP 138, OIL AND GAS FIELD SERVICES														
1982 ²	13 900	332 153	34 577	404.0	9 154.6	319.9	701.2	6 986.1	25 151.0	12 894.3	31 509.6	31 259.8	(X)	6 535.7
1977 ²	(NA)	9 182	1 938	196.4	2 936.0	160.3	353.4	2 357.1	6 973.6	3 784.0	9 058.8	8 886.3	(X)	1 698.8
1972 ²	(NA)	6 209	1 382	113.2	1 032.9	93.4	198.7	798.9	2 172.1	1 104.8	2 881.4	2 861.4	(X)	395.5
1967 ²	(NA)	6 878	1 431	106.4	706.5	90.6	195.5	569.0	1 524.2	741.0	2 016.7	1 985.3	(X)	248.6
1963	5 915	6 212	1 248	112.4	631.7	96.6	206.6	517.4	1 241.4	804.5	1 817.9	1 736.3	(X)	227.9
1958 ⁴	5 686	5 915	1 308	116.3	561.3	98.1	212.3	437.6	1 107.8	669.8	1 625.9	1 564.5	(X)	151.5
INDUSTRY 1381, DRILLING OIL AND GAS WELLS														
1982 ²	3 400	310 125	31 812	166.1	4 026.9	139.6	297.1	3 257.0	11 605.9	6 745.5	14 220.4	14 197.3	(X)	4 131.0
1977 ²	(NA)	2 625	840	79.4	1 316.7	69.5	151.4	1 128.5	3 306.9	2 098.3	4 320.4	4 310.8	(X)	1 084.8
1972 ²	(NA)	1 907	572	45.2	421.6	40.1	84.3	361.0	881.3	588.1	1 244.3	1 242.3	(X)	225.1
1967 ²	(NA)	2 347	581	42.9	294.7	38.7	81.4	252.5	627.4	406.7	893.7	892.7	(X)	140.4
1963	2 671	2 836	746	55.4	318.2	50.3	106.3	281.1	653.3	474.0	979.3	974.5	(X)	148.0
1958 ⁴	2 911	3 064	820	59.4	289.2	52.3	109.5	239.3	587.4	419.5	904.9	902.7	(X)	102.0
INDUSTRY 1382, OIL AND GAS FIELD EXPLORATION SERVICES														
1982 ²	2 427	34 225	385	40.7	781.5	33.0	72.4	616.1	2 293.2	1 002.0	2 936.3	2 929.5	(X)	358.9
1977 ²	(NA)	1 252	116	17.8	220.2	13.7	32.4	170.8	545.2	189.5	665.0	663.8	(X)	69.7
1972 ²	(NA)	715	91	9.8	88.9	7.8	18.0	65.1	211.7	72.1	253.9	252.5	(X)	29.9
1967 ²	(NA)	636	99	8.4	53.1	6.6	15.9	39.4	126.4	45.5	152.0	147.6	(X)	20.0
1963	359	373	68	8.7	47.8	7.2	16.2	36.9	90.0	41.6	119.8	111.7	(X)	11.7
1958 ⁴	329	347	76	9.6	43.6	7.6	16.7	31.1	64.4	29.9	87.2	86.1	(X)	7.1
INDUSTRY 1389, OIL AND GAS FIELD SERVICES, N.E.C.														
1982 ²	8 181	317 803	32 380	197.2	4 346.1	147.3	331.7	3 113.0	11 251.9	5 146.8	14 352.9	14 133.0	(X)	2 045.8
1977 ²	(NA)	5 305	982	99.3	1 399.2	77.0	169.6	1 057.6	3 121.6	1 496.2	4 073.4	3 911.7	(X)	544.3
1972 ²	(NA)	3 587	719	58.2	522.4	45.5	96.4	372.8	1 079.1	444.6	1 383.2	1 366.6	(X)	140.5
1967 ²	(NA)	3 895	751	54.8	358.7	45.3	98.2	274.4	770.4	288.8	971.0	945.0	(X)	88.2
1963	2 901	3 003	434	48.3	265.7	39.0	84.1	199.4	498.0	288.9	718.8	650.1	(X)	68.2
1958 ⁴	2 456	2 504	411	47.3	228.0	38.2	86.1	166.9	456.0	219.9	633.7	575.7	(X)	42.2

Note: For data prior to 1958, see 1963 Census of Mineral Industries, volume I, table 1 of industry chapter.

¹Value of gross shipments less value of crude minerals transferred to other establishments for preparation and value of resales. For service industries, represents total receipts less value of resales.

²Beginning with 1967, data for single-unit establishments without paid employees were excluded from the census.

³Data for 1982 are not comparable to prior years. In 1982, companies primarily performing oil and gas field services were requested to submit one report for all oil and gas field services performed in the United States. For such reports, receipts for services performed were requested by county. Establishment figures for 1982 represent sum of counties specified in each report.

⁴Excludes data for Alaska.

Table 2. Industry Statistics for Selected States: 1982 and 1977

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Industry and geographic area	1982										1977			
	E ¹	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)		
		Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				All employees ² (1,000)	Value added by mining (million dollars)	
INDUSTRY 1381, DRILLING OIL AND GAS WELLS														
Geographic Area														
United States	E1	10 125	1 812	166.1	4 026.9	139.6	297.1	3 257.0	11 605.9	6 745.5	14 220.4	14 131.0	79.4	3 306.4
Alabama	E1	50	6	.7	18.0	.6	1.4	15.6	52.4	58.1	68.4	42.1	.5	20.6
Alaska	-	23	17	2.6	112.7	2.2	6.2	97.1	363.7	118.6	395.0	87.3	1.0	67.2
Arizona	-	15	1	.2	6.7	.2	.5	5.5	9.7	9.8	16.1	3.4	(NA)	2.2
Arkansas	E2	125	18	1.3	33.2	1.1	2.3	28.6	87.2	66.8	125.6	28.4	.6	22.6
California	E2	204	68	5.9	146.1	4.6	8.7	108.6	379.7	109.0	384.6	104.1	3.5	124.4
Colorado	E3	224	50	4.0	98.5	3.5	7.3	81.6	248.2	156.3	317.7	86.8	2.1	69.9
Florida	E1	27	1	.2	3.7	.1	.3	2.9	10.2	5.3	12.3	3.2	.1	5.4
Illinois	E1	283	16	1.6	34.1	1.5	3.2	30.5	99.0	55.0	131.2	22.8	CC	(D)
Indiana	E1	93	6	.6	11.4	.5	1.1	9.8	28.6	15.4	38.6	5.4	.2	8.0
Kansas	-	768	55	4.4	89.3	3.9	7.9	75.3	229.1	128.1	306.0	51.2	2.0	71.6
Kentucky	E2	144	5	.7	12.3	.6	1.3	10.7	32.4	15.8	41.4	6.8	.3	7.9
Louisiana	E1	901	248	27.7	730.3	22.6	49.3	576.9	2 192.5	1 204.8	2 600.2	797.1	15.8	827.2
Michigan	E2	128	15	1.3	31.7	1.1	2.3	27.6	105.8	44.9	117.0	33.7	.9	26.6
Mississippi	-	234	22	2.3	63.2	2.2	5.3	58.8	186.9	212.8	244.2	155.5	1.5	57.3
Montana	E2	163	15	1.3	34.5	1.2	2.4	29.6	74.1	67.4	109.8	31.7	.9	29.8
Nebraska	-	51	7	.5	12.0	.4	.9	10.3	33.6	19.8	45.9	7.5	.2	9.9
Nevada	E1	16	3	.2	5.0	.1	.3	4.2	7.9	7.3	13.7	1.5	(NA)	(NA)
New Mexico	E1	207	54	3.8	90.5	3.2	6.8	73.7	216.7	147.5	271.6	92.6	2.8	77.8
New York	-	61	9	.6	13.1	.4	1.0	9.1	32.6	36.1	57.1	11.6	AA	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Industry and geographic area	1982											1977	
	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)
	E1 Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 1381, DRILLING OIL AND GAS WELLS—Con.													
Geographic Area—Con.													
North Dakota	-	133	24	1.8	53.4	1.6	3.5	46.1	126.5	81.9	163.9	44.5	.7
Ohio	-	422	41	3.7	76.5	3.0	6.9	60.0	524.0	197.0	641.0	80.0	1.7
Oklahoma	E1	1 525	360	27.8	652.1	22.9	47.9	524.7	1 878.1	1 106.6	2 322.4	662.3	8.3
Pennsylvania	-	190	16	1.8	38.3	1.4	3.2	26.8	122.0	110.6	201.0	31.6	.6
Tennessee	-	41	6	.3	5.1	.2	.5	3.9	14.9	14.1	24.9	4.1	.2
Texas	E1	3 341	612	58.4	1 330.9	49.8	103.7	1 072.5	3 553.6	2 130.5	4 312.3	1 371.8	27.1
Utah	-	97	18	1.2	29.2	1.1	2.3	25.4	84.9	36.5	26.5	24.1	
Washington	E8	14	2	.4	7.8	.4	.9	6.9	21.0	27.2	(D)	(NA)	(NA)
West Virginia	-	214	20	1.9	40.2	1.5	3.4	27.1	163.2	144.3	246.1	61.4	CC
Wyoming	E1	312	84	6.4	169.3	5.5	11.7	144.3	409.3	246.9	524.5	131.7	3.1
North And Mid-Atlantic	-	4	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA
Northern Gulf Of Mexico	-	6	5	1.1	36.8	.9	1.9	28.5	146.3	(D)	156.3	(D)	2.1
Pacific	-	2	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA
INDUSTRY 1382, OIL AND GAS FIELD EXPLORATION SERVICES													
Geographic Area													
United States	E2	4 225	385	40.7	781.5	33.0	72.4	616.1	2 293.2	1 002.0	2 936.3	358.9	17.8
Alabama	-	53	1	.2	3.6	.1	.3	2.7	10.1	4.3	12.6	1.8	(NA)
Alaska	-	17	7	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Arizona	E1	12	2	.2	2.2	.1	.2	1.8	6.6	1.1	7.3	.4	(NA)
Arkansas	E1	79	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
California	E3	102	18	1.5	32.0	1.1	2.4	24.2	78.2	36.9	104.5	10.6	.4
Colorado	E4	331	39	3.3	69.8	2.6	5.9	53.9	212.4	87.4	269.0	30.8	.8
Florida	E1	22	1	.1	2.0	.1	.2	1.5	6.3	1.9	7.5	.7	(NA)
Idaho	-	28	4	.2	3.3	.2	.4	2.9	10.5	5.2	14.0	1.7	(NA)
Illinois	E1	28	3	.2	4.5	.2	.4	3.2	12.3	5.6	16.4	1.5	(NA)
Kansas	E1	219	5	.8	12.9	.5	1.1	9.1	35.3	11.7	40.9	6.1	.1
Kentucky	E4	27	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.1
Louisiana	E2	342	51	5.0	97.0	4.0	9.1	75.2	306.3	125.1	369.0	62.4	1.6
Michigan	-	55	4	.7	16.5	.5	1.1	11.3	51.3	20.9	65.0	7.2	.6
Mississippi	E1	169	6	.8	14.6	.6	1.4	10.1	45.5	(D)	55.2	(D)	.7
Montana	-	180	14	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2
Nevada	E1	38	3	.3	6.2	.3	.6	4.9	15.4	7.1	20.9	1.6	(NA)
New Mexico	E2	74	10	.7	11.8	.6	1.2	9.1	30.0	14.7	37.5	7.2	.2
New York	E7	31	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
North Dakota	-	129	9	.6	12.4	.5	1.1	10.2	33.4	11.9	38.7	6.6	(NA)
Ohio	E2	42	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Oklahoma	E4	498	36	3.1	58.1	2.5	5.9	46.3	167.2	65.8	210.8	22.2	.8
Oregon	-	14	2	.1	2.2	.1	.2	1.6	5.0	4.5	8.0	1.5	(NA)
Pennsylvania	E1	19	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
Texas	E2	1 297	130	15.4	291.3	12.5	27.2	230.5	825.2	353.0	1 051.8	126.4	9.4
Utah	E1	67	6	.5	7.9	.4	.9	6.6	19.9	10.6	26.9	3.6	.5
West Virginia	E2	24	2	.2	2.8	.1	.3	2.3	7.1	3.8	9.3	1.6	(NA)
Wyoming	E1	142	8	.8	14.3	.7	1.4	11.8	37.2	16.2	48.7	4.7	.6
South Atlantic	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
Northern Gulf Of Mexico	-	5	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
Pacific	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
INDUSTRY 1389, OIL AND GAS FIELD SERVICES, N.E.C.													
Geographic Area													
United States	E1	17 803	2 380	197.2	4 346.1	147.3	331.7	3 113.0	11 251.9	5 146.8	14 352.9	2 045.8	99.3
Alabama	-	123	8	.7	13.4	.5	1.1	9.0	40.8	24.6	51.0	14.4	.3
Alaska	E1	58	33	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.0
Arizona	-	29	1	.1	2.5	.1	.2	1.9	6.8	1.3	7.3	1.3	(NA)
Arkansas	E2	191	10	1.1	21.5	.8	1.9	15.6	63.1	25.3	69.7	18.7	.5
California	E1	676	176	12.1	287.5	9.4	20.0	214.1	633.8	270.7	806.6	97.9	7.1
Colorado	E1	499	58	6.1	130.4	4.8	10.1	98.1	349.8	164.6	447.8	66.6	2.4
Connecticut	E6	5	2	.3	11.1	(Z)	.1	.3	1.1	.6	1.5	.2	(NA)
Florida	E2	42	4	.5	9.7	.4	.8	8.3	29.9	9.3	33.3	5.9	AA
Illinois	-	322	18	1.9	38.9	1.5	3.1	30.0	108.0	54.2	145.2	17.0	1.1
Indiana	-	77	3	.3	7.4	.3	.6	5.7	18.9	6.5	22.2	3.2	.6
Kansas	-	1 042	55	4.9	107.8	4.0	9.3	86.3	286.9	131.5	368.8	49.6	2.4
Kentucky	-	171	8	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	6.7
Louisiana	-	2 143	386	33.4	751.6	24.2	55.0	528.5	1 991.6	(D)	2 526.3	(D)	18.2
Michigan	-	243	14	1.2	28.6	.9	2.1	20.3	87.5	36.1	110.9	12.7	.7
Mississippi	E1	390	40	3.4	64.2	2.6	5.5	46.0	183.5	90.2	240.3	33.4	1.6
Montana	E1	240	18	1.4	29.2	1.0	2.4	22.5	73.0	32.1	90.9	14.2	.6
Nebraska	E1	83	3	.3	7.5	.3	.7	5.8	20.2	7.9	24.3	3.8	.1
Nevada	-	33	3	.9	17.7	.8	1.6	15.6	61.6	(D)	58.6	(D)	(NA)
New Jersey	-	14	2	.2	4.3	.1	.4	2.3	9.2	2.5	9.8	1.9	(NA)
New Mexico	E1	476	82	6.5	139.3	4.9	11.5	105.3	336.9	156.5	437.8	55.6	3.6
New York	-	50	5	.6	17.3	.3	.8	6.0	49.5	30.4	67.5	12.4	.2
North Carolina	-	7	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)
North Dakota	E1	344	40	3.0	66.3	2.3	5.3	52.0	170.2	73.4	207.2	36.4	BB
Ohio	-	399	26	2.8	57.1	2.2	4.9	42.4	186.7	111.9	263.2	35.4	1.2
Oklahoma	E1	2 703	329	28.0	613.8	19.3	43.1	395.5	1 519.3	710.6	1 935.2	294.7	13.5
Oregon	-	16	2	.1	2.7	.1	.2	2.0	7.6	1.5	7.7	1.4	(NA)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Industry and geographic area	1982											1977		
	Establishments during year		All employees		Production, development, and exploration workers			Value added by mining (million dollars)	Cost of supplies used, purchased machinery installed, etc. (million dollars)	Value of shipments and receipts (million dollars)	Capital expenditures (million dollars)	All employees ² (1,000)	Value added by mining (million dollars)	
	Total (number)	With 20 employees or more (number)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)							
INDUSTRY 1389, OIL AND GAS FIELD SERVICES, N.E.C.—Con.														
Geographic Area—Con.														
Pennsylvania.....	E1	155	21	1.8	37.0	1.4	3.3	27.0	126.5	67.4	169.4	24.5	.6	23.3
South Dakota.....	-	32	2	.2	3.4	.1	.3	2.6	9.1	2.0	9.6	1.5	(NA)	(NA)
Tennessee.....	E1	44	3	.2	5.0	.2	.5	4.1	16.4	5.1	18.1	3.4	(NA)	(NA)
Texas.....	E1	5 927	860	68.5	1 448.2	51.8	117.2	1 049.6	3 724.2	1 776.7	4 758.7	742.2	36.8	1 148.1
Utah.....	E1	197	29	2.2	51.5	1.8	3.9	41.0	139.1	62.0	177.5	23.6	1.0	49.2
Washington.....	-	19	2	.1	4.3	.1	.3	3.2	12.1	3.5	12.7	2.9	(NA)	(NA)
West Virginia.....	-	193	17	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.7	30.7	
Wyoming.....	E1	710	104	7.9	175.9	6.3	13.8	136.9	467.2	189.8	586.3	70.7	3.6	153.0
Northern Gulf Of Mexico.....	-	16	7	.7	16.5	.5	1.2	11.2	51.5	22.8	65.9	8.4	CC	(D)
Pacific.....	-	3	3	.1	2.7	.1	.2	2.3	5.2	1.4	6.2	.4	AA	

¹Some payroll and sales data for small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate statistics for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Data lines with less than 100 employees are not shown. Some statistics are withheld to avoid disclosing data for individual companies. If employment is 100 or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA—100 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

Table 3. Products or Services for Selected States: 1982 and 1977

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services		
		Quantity	Value (million dollars)	Quantity	Value (million dollars)	
DRILLING OIL AND GAS WELLS						
United States						
1381—	Drilling oil and gas wells.....	(X)	14 323.9	(X)	4 229.4	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	336.9	9 414.3	210.3	
13810 12	Drilling in, spudding in, and tailing in.....	do..	28.5	250.4	4.6	
13810 14	Reworking wells.....	(X)	1 368.6	(X)	445.0	
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	3 290.6	(X)	403.7	
Alabama						
1381—	Drilling oil and gas wells.....	(X)	68.1	(NA)	(NA)	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	1.0	42.7	(NA)	
Arkansas						
1381—	Drilling oil and gas wells.....	(X)	117.4	(NA)	(NA)	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	3.7	76.5	(NA)	
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	33.9	(NA)	(NA)	
California						
1381—	Drilling oil and gas wells.....	(X)	389.9	(NA)	(NA)	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	6.9	188.1	(NA)	
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	108.4	(NA)	(NA)	
Colorado						
1381—	Drilling oil and gas wells.....	(X)	317.4	(NA)	(NA)	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	7.2	173.4	(NA)	
13810 12	Drilling in, spudding in, and tailing in	do..	.1	.5	(NA)	
13810 14	Reworking wells.....	(X)	24.1	(NA)	(NA)	
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	119.3	(NA)	(NA)	
Illinois						
1381—	Drilling oil and gas wells.....	(X)	131.0	(NA)	(NA)	
13810 11	Drilling oil, gas, dry, and service wells.....	mil. ft..	5.8	69.6	(NA)	
13810 12	Drilling in, spudding in, and tailing in	do..	.4	1.3	(NA)	
13810 14	Reworking wells.....	(X)	3.7	(NA)	(NA)	
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	56.4	(NA)	(NA)	

See footnotes at end of table.

6 PRELIMINARY STATISTICS

1982 CENSUS OF MINERAL INDUSTRIES

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	DRILLING OIL AND GAS WELLS—Con.				
	Indiana				
1381- --	Drilling oil and gas wells	(X)	39.2	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	2.0	24.3	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..		.1	(NA)
13810 14	Reworking wells	(X)	.5	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	14.2	(NA)	(NA)
	Kansas				
1381- --	Drilling oil and gas wells	(X)	334.6	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	17.9	217.9	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	3.1	11.2	(NA)
13810 14	Reworking wells	(X)	16.8	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	88.6	(NA)	(NA)
	Louisiana				
1381- --	Drilling oil and gas wells	(X)	2 524.7	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	33.8	1 904.3	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	4.3	64.1	(NA)
13810 14	Reworking wells	(X)	222.8	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	333.4	(NA)	(NA)
	Michigan				
1381- --	Drilling oil and gas wells	(X)	116.3	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	2.5	65.6	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	48.5	(NA)	(NA)
	Mississippi				
1381- --	Drilling oil and gas wells	(X)	240.3	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	5.5	202.8	(NA)
13810 14	Reworking wells	(X)	6.4	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	31.0	(NA)	(NA)
	Montana				
1381- --	Drilling oil and gas wells	(X)	109.8	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	2.2	65.7	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	32.3	(NA)	(NA)
	Nebraska				
1381- --	Drilling oil and gas wells	(X)	42.5	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	1.8	24.7	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	9.7	(NA)	(NA)
	Nevada				
1381- --	Drilling oil and gas wells	(X)	13.5	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	.4	9.9	(NA)
13810 14	Reworking wells	(X)	.9	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	2.7	(NA)	(NA)
	New Mexico				
1381- --	Drilling oil and gas wells	(X)	265.9	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	9.2	185.5	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	42.3	(NA)	(NA)
	New York				
1381- --	Drilling oil and gas wells	(X)	52.4	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	(S)	36.8	(NA)
	North Dakota				
1381- --	Drilling oil and gas wells	(X)	167.4	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	(S)	147.5	(NA)
13810 14	Reworking wells	(X)	16.4	(NA)	(NA)
	Ohio				
1381- --	Drilling oil and gas wells	(X)	561.6	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	14.2	446.9	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	2.1	21.2	(NA)
13810 14	Reworking wells	(X)	.4	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	91.0	(NA)	(NA)
	Oklahoma				
1381- --	Drilling oil and gas wells	(X)	2 338.3	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	(S)	1 668.5	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	4.7	55.1	(NA)
13810 14	Reworking wells	(X)	.9	90.8	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	523.9	(NA)	(NA)

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	DRILLING OIL AND GAS WELLS—Con.				
	Pennsylvania				
1381--	Drilling oil and gas wells	(X)	183.7	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	10.3	146.6	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	(D)	(D)	(NA)
13810 14	Reworking wells	(X)	1.3	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	33.8	(NA)	(NA)
	South Dakota				
1381--	Drilling oil and gas wells	(X)	5.3	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	.2	4.6	(NA)
	Tennessee				
1381--	Drilling oil and gas wells	(X)	20.2	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	.9	12.9	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	7.1	(NA)	(NA)
	Texas				
1381--	Drilling oil and gas wells	(X)	4 327.9	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	95.8	2 410.8	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	9.9	66.0	(NA)
13810 14	Reworking wells	(X)	426.5	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	1 424.5	(NA)	(NA)
	Utah				
1381--	Drilling oil and gas wells	(X)	95.4	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	(S)	64.7	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	17.4	(NA)	(NA)
	West Virginia				
1381--	Drilling oil and gas wells	(X)	196.4	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	9.2	157.1	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	.3	2.2	(NA)
13810 14	Reworking wells	(X)	1.9	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	35.3	(NA)	(NA)
	Wyoming				
1381--	Drilling oil and gas wells	(X)	537.1	(NA)	(NA)
13810 11	Drilling oil, gas, dry, and service wells .....	. mil. ft..	12.4	362.9	(NA)
13810 12	Drilling in, spudding in, and tailing in	do..	.6	4.1	(NA)
13810 14	Reworking wells	(X)	67.7	(NA)	(NA)
13810 00	Drilling oil and gas wells, n.s.k. ¹	(X)	102.3	(NA)	(NA)
	Northern Gulf Of Mexico				
1381--	Drilling oil and gas wells	(X)	156.1	(NA)	(NA)

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services		
		Quantity	Value (million dollars)	Quantity	Value (million dollars)	
OIL AND GAS FIELD EXPLORATION SERVICES						
United States						
1382- —	Oil and gas exploration services	(X)	2 832.7	(X)	658.8	
13820 11	Geophysical exploration	(X)	1 714.9	(X)	507.3	
13820 13	Other exploration	(X)	99.8	(X)	32.1	
13820 00	Exploration services, n.s.k. ¹	(X)	1 018.0	(X)	119.4	
Alabama						
1382- —	Oil and gas exploration services	(X)	11.6	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	10.3	(NA)	(NA)	
Arizona						
1382- —	Oil and gas exploration services	(X)	7.0	(NA)	(NA)	
California						
1382- —	Oil and gas exploration services	(X)	100.0	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	55.2	(NA)	(NA)	
13820 13	Other exploration	(X)	3.3	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	41.5	(NA)	(NA)	
Colorado						
1382- —	Oil and gas exploration services	(X)	262.4	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	95.8	(NA)	(NA)	
13820 13	Other exploration	(X)	3.8	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	162.7	(NA)	(NA)	
Illinois						
1382- —	Oil and gas exploration services	(X)	15.2	(NA)	(NA)	
Indiana						
1382- —	Oil and gas exploration services	(X)	6.6	(NA)	(NA)	
Kansas						
1382- —	Oil and gas exploration services	(X)	41.4	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	17.7	(NA)	(NA)	
Louisiana						
1382- —	Oil and gas exploration services	(X)	362.3	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	207.9	(NA)	(NA)	
13820 13	Other exploration	(X)	23.0	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	131.5	(NA)	(NA)	
Michigan						
1382- —	Oil and gas exploration services	(X)	63.5	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	57.2	(NA)	(NA)	
Mississippi						
1382- —	Oil and gas exploration services	(X)	52.8	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	40.8	(NA)	(NA)	
Montana						
1382- —	Oil and gas exploration services	(X)	68.3	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	47.9	(NA)	(NA)	
13820 13	Other exploration	(X)	1.9	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	18.6	(NA)	(NA)	
Nebraska						
1382- —	Oil and gas exploration services	(X)	4.7	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	4.2	(NA)	(NA)	
13820 13	Other exploration	(X)	.5	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	.5	(NA)	(NA)	
Nevada						
1382- —	Oil and gas exploration services	(X)	17.1	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	13.7	(NA)	(NA)	
13820 13	Other exploration	(X)	.5	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	2.9	(NA)	(NA)	
New Mexico						
1382- —	Oil and gas exploration services	(X)	34.6	(NA)	(NA)	
13820 11	Geophysical exploration	(X)	20.5	(NA)	(NA)	
13820 13	Other exploration	(X)	.4	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹	(X)	13.7	(NA)	(NA)	

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services		
		Quantity	Value (million dollars)	Quantity	Value (million dollars)	
OIL AND GAS FIELD EXPLORATION SERVICES—Con.						
New York						
1382- --	Oil and gas exploration services -----	(X)	12.1	(NA)	(NA)	
North Dakota						
1382- --	Oil and gas exploration services -----	(X)	36.7	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	28.1	(NA)	(NA)	
13820 13	Other exploration -----	(X)	2.9	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹ -----	(X)	5.7	(NA)	(NA)	
Ohio						
1382- --	Oil and gas exploration services -----	(X)	23.3	(NA)	(NA)	
Oklahoma						
1382- --	Oil and gas exploration services -----	(X)	204.2	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	74.1	(NA)	(NA)	
13820 13	Other exploration -----	(X)	5.6	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹ -----	(X)	124.5	(NA)	(NA)	
Oregon						
1382- --	Oil and gas exploration services -----	(X)	8.0	(NA)	(NA)	
Pennsylvania						
1382- --	Oil and gas exploration services -----	(X)	10.7	(NA)	(NA)	
Tennessee						
1382- --	Oil and gas exploration services -----	(X)	3.8	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	1.4	(NA)	(NA)	
Texas						
1382- --	Oil and gas exploration services -----	(X)	1 023.1	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	626.7	(NA)	(NA)	
13820 13	Other exploration -----	(X)	25.5	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹ -----	(X)	370.8	(NA)	(NA)	
Utah						
1382- --	Oil and gas exploration services -----	(X)	25.6	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	16.0	(NA)	(NA)	
13820 13	Other exploration -----	(X)	3.7	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹ -----	(X)	5.9	(NA)	(NA)	
Virginia						
1382- --	Oil and gas exploration services -----	(X)	4.2	(NA)	(NA)	
Wyoming						
1382- --	Oil and gas exploration services -----	(X)	45.4	(NA)	(NA)	
13820 11	Geophysical exploration -----	(X)	29.4	(NA)	(NA)	
13820 13	Other exploration -----	(X)	4.0	(NA)	(NA)	
13820 00	Exploration services, n.s.k. ¹ -----	(X)	12.0	(NA)	(NA)	

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	OIL AND GAS FIELD SERVICES, N.E.C.				
	United States				
13890 —	Oil and gas field services, n.e.c.	(X)	14 289.6	(X)	3 951.3
13890 11	Cementing wells	(X)	1 318.2	(X)	517.0
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	102.2	398.4	232.8
13890 13	Perforating well casing		(X)	305.4	115.7
13890 14	Well surveying and well logging		(X)	1 648.8	556.5
13890 21	Hydraulic fracturing	1,000 wells	84.4	1 126.2	282.8
13890 24	Running, cutting, and pulling casing, tubes, or rods		(X)	666.7	204.5
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	215.7	97.6
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	311.9	134.5
13890 35	Pumping wells but not operating leases		(X)	94.0	21.1
13890 36	Other oil and gas field services		(X)	4 286.1	1 145.8
13890 00	Oil and gas field services, n.s.k. ¹		(X)	3 918.0	643.0
	Alabama				
13890 —	Oil and gas field services, n.e.c.	(X)	52.3	(NA)	(NA)
13890 11	Cementing wells	(X)	4.9	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	.3	1.4	(NA)
13890 21	Hydraulic fracturing	do	.3	4.2	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods		(X)	.8	(NA)
13890 35	Pumping wells but not operating leases		(X)	.4	(NA)
13890 36	Other oil and gas field services		(X)	11.7	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	16.5	(NA)
	Arkansas				
13890 —	Oil and gas field services, n.e.c.	(X)	72.0	(NA)	(NA)
13890 13	Perforating well casing		(X)	3.7	(NA)
13890 14	Well surveying and well logging		(X)	1.9	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods		(X)	5.4	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	.7	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	2.7	(NA)
13890 36	Other oil and gas field services		(X)	17.7	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	24.0	(NA)
	California				
13890 —	Oil and gas field services, n.e.c.	(X)	775.9	(NA)	(NA)
13890 11	Cementing wells	(X)	74.5	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	6.4	22.4	(NA)
13890 13	Perforating well casing		(X)	18.3	(NA)
13890 14	Well surveying and well logging		(X)	98.6	(NA)
13890 21	Hydraulic fracturing	1,000 wells	4.0	49.9	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods		(X)	52.5	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	15.1	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	26.1	(NA)
13890 35	Pumping wells but not operating leases		(X)	2.7	(NA)
13890 36	Other oil and gas field services		(X)	208.1	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	207.7	(NA)
	Colorado				
13890 —	Oil and gas field services, n.e.c.	(X)	435.0	(NA)	(NA)
13890 11	Cementing wells	(X)	33.4	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	2.6	12.4	(NA)
13890 13	Perforating well casing		(X)	7.4	(NA)
13890 14	Well surveying and well logging		(X)	29.9	(NA)
13890 21	Hydraulic fracturing	1,000 wells	2.5	34.0	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods		(X)	13.0	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	8.8	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	8.1	(NA)
13890 35	Pumping wells but not operating leases		(X)	1.5	(NA)
13890 36	Other oil and gas field services		(X)	155.8	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	130.7	(NA)
	Illinois				
13890 —	Oil and gas field services, n.e.c.	(X)	147.1	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	3.2	9.1	(NA)
13890 13	Perforating well casing		(X)	6.1	(NA)
13890 14	Well surveying and well logging		(X)	8.2	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	5.1	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	2.7	(NA)
13890 35	Pumping wells but not operating leases		(X)	.9	(NA)
13890 36	Other oil and gas field services		(X)	18.4	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	61.4	(NA)
	Indiana				
13890 —	Oil and gas field services, n.e.c.	(X)	24.8	(NA)	(NA)
13890 11	Cementing wells	(X)	2.2	(NA)	(NA)
13890 14	Well surveying and well logging		(X)	5.9	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines		(X)	.7	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells		(X)	.3	(NA)
13890 35	Pumping wells but not operating leases		(X)	.6	(NA)
13890 36	Other oil and gas field services		(X)	6.2	(NA)
13890 00	Oil and gas field services, n.s.k. ¹		(X)	5.6	(NA)

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services		
		Quantity	Value (million dollars)	Quantity	Value (million dollars)	
OIL AND GAS FIELD SERVICES, N.E.C.—Con.						
Kansas						
13890 11	Oil and gas field services, n.e.c.	(X)	371.5	(NA)	(NA)	
13890 12	Cementing wells	(X)	50.5	(NA)	(NA)	
13890 13	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	4.8	18.0	(NA)	
13890 14	Perforating well casing	(X)	17.5	(NA)	(NA)	
13890 15	Well surveying and well logging	(X)	27.7	(NA)	(NA)	
13890 21	Hydraulic fracturing	1,000 wells	2.6	32.9	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	18.2	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	4.7	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	6.8	(NA)	(NA)	
13890 35	Pumping wells but not operating leases	(X)	4.0	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	78.2	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	113.0	(NA)	(NA)	
Louisiana						
13890 11	Oil and gas field services, n.e.c.	(X)	2 504.4	(NA)	(NA)	
13890 12	Cementing wells	(X)	186.5	(NA)	(NA)	
13890 13	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	11.0	49.2	(NA)	
13890 14	Perforating well casing	(X)	51.7	(NA)	(NA)	
13890 15	Well surveying and well logging	(X)	385.0	(NA)	(NA)	
13890 21	Hydraulic fracturing	1,000 wells	10.7	142.9	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	100.6	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	35.6	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	41.8	(NA)	(NA)	
13890 35	Pumping wells but not operating leases	(X)	27.3	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	1 034.9	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	448.9	(NA)	(NA)	
Michigan						
13890 11	Oil and gas field services, n.e.c.	(X)	109.1	(NA)	(NA)	
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	.9	4.5	(NA)	
13890 14	Well surveying and well logging	(X)	22.2	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	4.2	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	2.1	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	1.9	(NA)	(NA)	
13890 35	Pumping wells but not operating leases	(X)	.8	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	23.8	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	25.8	(NA)	(NA)	
Mississippi						
13890 11	Oil and gas field services, n.e.c.	(X)	237.3	(NA)	(NA)	
13890 13	Perforating well casing	(X)	4.2	(NA)	(NA)	
13890 14	Well surveying and well logging	(X)	25.5	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	15.1	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	5.1	(NA)	(NA)	
13890 35	Pumping wells but not operating leases	(X)	1.1	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	69.1	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	79.3	(NA)	(NA)	
Montana						
13890 11	Oil and gas field services, n.e.c.	(X)	110.1	(NA)	(NA)	
13890 13	Cementing wells	(X)	5.7	(NA)	(NA)	
13890 14	Perforating well casing	(X)	1.2	(NA)	(NA)	
13890 24	Well surveying and well logging	(X)	18.9	(NA)	(NA)	
13890 25	Running, cutting, and pulling casing, tubes, or rods	(X)	4.2	(NA)	(NA)	
13890 26	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	1.2	(NA)	(NA)	
13890 35	Cleaning out, bailing out, or swabbing wells	(X)	3.5	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	34.2	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	33.7	(NA)	(NA)	
Nebraska						
13890 11	Oil and gas field services, n.e.c.	(X)	24.7	(NA)	(NA)	
13890 13	Perforating well casing	(X)	1.7	(NA)	(NA)	
13890 14	Well surveying and well logging	(X)	6.5	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	.6	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	5.4	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	6.6	(NA)	(NA)	
Nevada						
13890 11	Oil and gas field services, n.e.c.	(X)	59.7	(NA)	(NA)	
New Mexico						
13890 11	Oil and gas field services, n.e.c.	(X)	435.2	(NA)	(NA)	
13890 12	Cementing wells	(X)	56.2	(NA)	(NA)	
13890 13	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells	4.3	17.2	(NA)	
13890 14	Perforating well casing	(X)	11.5	(NA)	(NA)	
13890 15	Well surveying and well logging	(X)	30.7	(NA)	(NA)	
13890 21	Hydraulic fracturing	1,000 wells	4.3	60.7	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	17.8	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	9.6	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	10.6	(NA)	(NA)	
13890 35	Pumping wells but not operating leases	(X)	4.9	(NA)	(NA)	
13890 36	Other oil and gas field services	(X)	90.9	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹	(X)	125.3	(NA)	(NA)	

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services		
		Quantity	Value (million dollars)	Quantity	Value (million dollars)	
OIL AND GAS FIELD SERVICES, N.E.C.—Con.						
New York						
1389- --	Oil and gas field services, n.e.c. -----	(X)	69.5	(NA)	(NA)	
13890 11	Cementing wells -----	(X)	.4	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods -----	(X)	.1	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines -----	(X)	1.5	(NA)	(NA)	
13890 35	Pumping wells but not operating leases -----	(X)	.4	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	7.5	(NA)	(NA)	
North Dakota						
1389- --	Oil and gas field services, n.e.c. -----	(X)	202.7	(NA)	(NA)	
13890 11	Cementing wells -----	(X)	14.3	(NA)	(NA)	
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing -----	1,000 wells--	3.9	(NA)	(NA)	
13890 13	Perforating well casing -----	(X)	4.7	(NA)	(NA)	
13890 14	Well surveying and well logging -----	(X)	33.8	(NA)	(NA)	
13890 21	Hydraulic fracturing -----	1,000 wells--	14.8	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods -----	(X)	12.8	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines -----	(X)	6.3	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	12.3	(NA)	(NA)	
13890 35	Pumping wells but not operating leases -----	(X)	1.4	(NA)	(NA)	
13890 36	Other oil and gas field services -----	(X)	35.4	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	63.1	(NA)	(NA)	
Ohio						
1389- --	Oil and gas field services, n.e.c. -----	(X)	307.9	(NA)	(NA)	
13890 11	Cementing wells -----	(X)	37.2	(NA)	(NA)	
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing -----	1,000 wells--	11.0	(NA)	(NA)	
13890 13	Perforating well casing -----	(X)	4.1	(NA)	(NA)	
13890 14	Well surveying and well logging -----	(X)	12.6	(NA)	(NA)	
13890 21	Hydraulic fracturing -----	1,000 wells--	41.1	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods -----	(X)	7.1	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines -----	(X)	11.9	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	8.0	(NA)	(NA)	
13890 35	Pumping wells but not operating leases -----	(X)	13.1	(NA)	(NA)	
13890 36	Other oil and gas field services -----	(X)	55.2	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	106.6	(NA)	(NA)	
Oklahoma						
1389- --	Oil and gas field services, n.e.c. -----	(X)	1 895.1	(NA)	(NA)	
13890 11	Cementing wells -----	(X)	203.4	(NA)	(NA)	
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing -----	1,000 wells--	47.4	(NA)	(NA)	
13890 13	Perforating well casing -----	(X)	35.7	(NA)	(NA)	
13890 14	Well surveying and well logging -----	(X)	199.3	(NA)	(NA)	
13890 21	Hydraulic fracturing -----	1,000 wells--	180.9	(NA)	(NA)	
13890 24	Running, cutting, and pulling casing, tubes, or rods -----	(X)	78.7	(NA)	(NA)	
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines -----	(X)	22.4	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	54.2	(NA)	(NA)	
13890 35	Pumping wells but not operating leases -----	(X)	5.1	(NA)	(NA)	
13890 36	Other oil and gas field services -----	(X)	551.6	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	516.3	(NA)	(NA)	
Pennsylvania						
1389- --	Oil and gas field services, n.e.c. -----	(X)	182.3	(NA)	(NA)	
13890 13	Perforating well casing -----	(X)	4.7	(NA)	(NA)	
13890 14	Well surveying and well logging -----	(X)	13.6	(NA)	(NA)	
13890 21	Hydraulic fracturing -----	1,000 wells--	24.9	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	2.2	(NA)	(NA)	
13890 36	Other oil and gas field services -----	(X)	43.9	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	61.9	(NA)	(NA)	
South Dakota						
1389- --	Oil and gas field services, n.e.c. -----	(X)	9.3	(NA)	(NA)	
13890 11	Cementing wells -----	(X)	.2	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	.3	(NA)	(NA)	
13890 36	Other oil and gas field services -----	(X)	2.1	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	.3	(NA)	(NA)	
Tennessee						
1389- --	Oil and gas field services, n.e.c. -----	(X)	19.7	(NA)	(NA)	
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing -----	1,000 wells--	.2	(NA)	(NA)	
13890 13	Perforating well casing -----	(X)	.6	(NA)	(NA)	
13890 14	Well surveying and well logging -----	(X)	2.1	(NA)	(NA)	
13890 26	Cleaning out, bailing out, or swabbing wells -----	(X)	.4	(NA)	(NA)	
13890 00	Oil and gas field services, n.s.k. ¹ -----	(X)	3.7	(NA)	(NA)	

See footnotes at end of table.

Table 3. Products or Services for Selected States: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in or industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix.]

Product or service code	Geographic area and product or service	1982 shipments or receipts for services		1977 shipments or receipts for services	
		Quantity	Value (million dollars)	Quantity	Value (million dollars)
	OIL AND GAS FIELD SERVICES, N.E.C.—Con.				
	Texas				
1389—	Oil and gas field services, n.e.c.	(X)	4 746.6	(NA)	(NA)
13890 11	Cementing wells	(X)	396.9	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells..	35.1	132.7	(NA)
13890 13	Perforating well casing	(X)	94.0	(NA)	(NA)
13890 14	Well surveying and well logging	(X)	488.5	(NA)	(NA)
13890 21	Hydraulic fracturing	1,000 wells..	25.5	343.6	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	248.6	(NA)	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	46.5	(NA)	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	96.2	(NA)	(NA)
13890 35	Pumping wells but not operating leases	(X)	23.8	(NA)	(NA)
13890 36	Other oil and gas field services	(X)	1 352.6	(NA)	(NA)
13890 00	Oil and gas field services, n.s.k. ¹	(X)	1 523.2	(NA)	(NA)
	Utah				
1389—	Oil and gas field services, n.e.c.	(X)	174.1	(NA)	(NA)
13890 11	Cementing wells	(X)	15.4	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells..	1.3	5.7	(NA)
13890 13	Perforating well casing	(X)	3.7	(NA)	(NA)
13890 14	Well surveying and well logging	(X)	18.6	(NA)	(NA)
13890 21	Hydraulic fracturing	1,000 wells..	1.1	13.6	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	12.1	(NA)	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	1.0	(NA)	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	6.0	(NA)	(NA)
13890 35	Pumping wells but not operating leases	(X)	.4	(NA)	(NA)
13890 36	Other oil and gas field services	(X)	41.3	(NA)	(NA)
13890 00	Oil and gas field services, n.s.k. ¹	(X)	56.3	(NA)	(NA)
	Wyoming				
1389—	Oil and gas field services, n.e.c.	(X)	549.2	(NA)	(NA)
13890 11	Cementing wells	(X)	51.1	(NA)	(NA)
13890 12	Acidizing and other chemical treatment of wells, excluding hydraulic fracturing	1,000 wells..	5.0	19.4	(NA)
13890 13	Perforating well casing	(X)	9.4	(NA)	(NA)
13890 14	Well surveying and well logging	(X)	63.1	(NA)	(NA)
13890 21	Hydraulic fracturing	1,000 wells..	3.3	42.1	(NA)
13890 24	Running, cutting, and pulling casing, tubes, or rods	(X)	56.5	(NA)	(NA)
13890 25	Installing production equipment, such as wellhead fittings, pumps, and engines	(X)	10.5	(NA)	(NA)
13890 26	Cleaning out, bailing out, or swabbing wells	(X)	14.1	(NA)	(NA)
13890 35	Pumping wells but not operating leases	(X)	1.9	(NA)	(NA)
13890 36	Other oil and gas field services	(X)	131.4	(NA)	(NA)
13890 00	Oil and gas field services, n.s.k. ¹	(X)	149.7	(NA)	(NA)
	Northern Gulf of Mexico				
1389—	Oil and gas field services, n.e.c.	(X)	64.9	(NA)	(NA)
13890 36	Other oil and gas field services	(X)	14.2	(NA)	(NA)

¹Includes value for establishments that did not report detailed data and estimates for small companies (estimates were made from administrative-record data rather than collected from respondents).

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Supply code	Industry and supply consumed	1982		1977	
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)
	INDUSTRY 1381, DRILLING OIL AND GAS WELLS				
	Selected supplies used, minerals received for preparation, and purchased machinery installed	(X)	5 570.3	(X)	1 728.3
353020	Purchased machinery installed, including mobile loading and transportation equipment	(X)	2 905.2		
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery	(X)	436.8	(X)	1 017.3

See footnotes at end of table.

Table 4a. Selected Supplies, Minerals Received for Preparation, and Purchased Machinery Installed: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Supply code	Industry and supply consumed	1982		1977		
		Quantity	Delivered cost (million dollars)	Quantity	Delivered cost (million dollars)	
INDUSTRY 1381, DRILLING OIL AND GAS WELLS—Con.						
Selected supplies used, minerals received for preparation, and purchased machinery installed—Con.						
Supplies used:						
280111	Industrial chemicals including acidizing materials (except drilling fluids)	(X)	10.5	(X)	(1)	
289910	Drilling fluids (drilling mud and drilling mud materials; mud thinners, thickeners, and purifiers)	(X)	63.0	(X)	(1)	
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	77.0	(X)	(1)	
324100	Cement.....	(S)	25.8	(NA)	(1)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes)	(X)	181.0	(X)	175.2	
349020	Valves and pipe fittings	(X)	41.9	(X)	(1)	
353310	Drill bits and reamers	(X)	161.1	(X)	(1)	
970099	All other supplies ²	(X)	332.0	(X)	396.2	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	1 335.9	(X)	139.6	
INDUSTRY 1382, OIL AND GAS FIELD EXPLORATION SERVICES						
Selected supplies used, minerals received for preparation, and purchased machinery installed						
353020	Purchased machinery installed, including mobile loading and transportation equipment	(X)	198.1			
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery	(X)	21.5	(X)	85.9	
Supplies used:						
280111	Industrial chemicals including acidizing materials (except drilling fluids)	(X)	.3	(X)	(1)	
289910	Drilling fluids (drilling mud and drilling mud materials; mud thinners, thickeners, and purifiers)	(X)	2.5	(X)	(1)	
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	1.9	(X)	(1)	
324100	Cement.....	(S)	.7	(NA)	(1)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes)	(X)	7.9	(X)	8.6	
349020	Valves and pipe fittings	(X)	.3	(X)	(1)	
353310	Drill bits and reamers	(X)	6.2	(X)	(1)	
970099	All other supplies ²	(X)	103.4	(X)	29.7	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	412.7	(X)	22.9	
INDUSTRY 1389, OIL AND GAS FIELD SERVICES, N.E.C.						
Selected supplies used, minerals received for preparation, and purchased machinery installed						
353020	Purchased machinery installed, including mobile loading and transportation equipment	(X)	1 244.4			
353030	Parts and attachments (except those listed elsewhere) for construction, mining, and conveying equipment; and for preparation machinery	(X)	182.7	(X)	465.7	
Supplies used:						
280111	Industrial chemicals including acidizing materials (except drilling fluids)	(X)	300.4	(X)	(1)	
289910	Drilling fluids (drilling mud and drilling mud materials; mud thinners, thickeners, and purifiers)	(X)	216.4	(X)	(1)	
290000	Lubricating oils and greases, including hydraulic oils.....	(X)	12.6	(X)	(1)	
324100	Cement.....	(S)	274.3	(NA)	(1)	
331201	Steel mill shapes and forms (such as plates, sheets, roof bolts, bars, rails, wheels, pipe, tubing, wire products, and structural shapes)	(X)	82.2	(X)	28.4	
349020	Valves and pipe fittings	(X)	34.3	(X)	(1)	
353310	Drill bits and reamers	(X)	5.9	(X)	(1)	
970099	All other supplies ²	(X)	431.2	(X)	530.4	
974000	Undistributed—minerals, purchased machinery, parts, attachments, and supplies used ³	(X)	1 389.6	(X)	162.0	

¹Cost for this supply is shown separately in 1982. In 1977, this category was included in all other supplies.

²A number of supplies included in the all other supplies category in 1977 are now shown separately.

³Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

Table 4b. Fuels Consumed by Type, 1982 and 1977, and End-of-Year Fuel Stocks, 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendix]

Fuel code	Industry and fuel consumed	1982 consumption		1982 end-of-year stocks ¹ (quantity)	1977 consumption	
		Quantity	Delivered cost (million dollars)		Quantity	Delivered cost (million dollars)
INDUSTRY 1381, DRILLING OIL AND GAS WELLS						
Fuels used		(X)	518.0	(X)	(X)	155.1
Fuel oil:						
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	1,000 bbl.	5 846.2	274.6	84.7	5 189.1
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	do	601.7	24.4	8.9	729.4
131159	Gas—natural, manufactured, and mixed	bil. cu. ft.	1.1	2.3	(X)	5.2
291111	Gasoline	mil. gal.	57.6	62.3	1.9	33.7
960018	Other fuels—liquefied petroleum gas, coke, wood, and other		(X)	16.1	(X)	(X)
977000	Undistributed fuels ²		(X)	138.3	(X)	13.4
INDUSTRY 1382, OIL AND GAS FIELD EXPLORATION SERVICES						
Fuels used		(X)	98.5	(X)	(X)	17.2
Fuel oil:						
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	1,000 bbl.	420.5	18.5	5.3	200.7
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	do	(D)	(D)	(D)	36.0
131159	Gas—natural, manufactured, and mixed	bil. cu. ft.	.1	.4	(X)	(Z)
291111	Gasoline	mil. gal.	35.8	40.7	(D)	18.6
960018	Other fuels—liquefied petroleum gas, coke, wood, and other		(X)	.3	(X)	(X)
977000	Undistributed fuels ²		(X)	(D)	(X)	2.2
INDUSTRY 1389, OIL AND GAS FIELD SERVICES, N.E.C.						
Fuels used		(X)	381.7	(X)	(X)	101.3
Fuel oil:						
291141	Distillate (light) grade numbers 1, 2, 4, and light diesel fuel	1,000 bbl.	2 409.9	110.4	39.5	1 418.6
291151	Residual (heavy) grade numbers 5 and 6 and heavy diesel fuel	do	229.2	10.7	2.4	170.4
131159	Gas—natural, manufactured, and mixed	bil. cu. ft.	5.1	13.3	(X)	2.3
291111	Gasoline	mil. gal.	148.6	162.8	6.7	88.3
960018	Other fuels—liquefied petroleum gas, coke, wood, and other		(X)	8.5	(X)	(X)
977000	Undistributed fuels ²		(X)	76.0	(X)	15.5

¹Fuel stocks were collected for the first time in 1982.

²Represents cost for establishments that did not report detailed data, including establishments that were not mailed a form.

APPENDIX

Scope and Coverage and Explanation of Terms

SCOPE AND COVERAGE

Establishment Basis of Reporting

The census of mineral industries covers each mining establishment of firms with one paid employee or more operating in the United States. A firm operating more than one establishment is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are asked to submit separate reports if records permit such a separation and the activities are of significant size.

Statistics for employment and payroll for individual industries and industry groups also include employment and payroll figures for administrative offices, warehouses, storage facilities, and other auxiliary establishments servicing mining establishments. Respondents were asked to file separate reports for any separately operated auxiliary establishments. Classification of employment and payroll data at such auxiliary establishments was based on the mining establishments served.

For oil and gas field operations and for contract services, the basis for reporting was different from the "establishment" basis used for other types of mining. Firms operating oil and gas wells, drilling wells, or exploring for oil and gas for their own account, were required to submit a separate report for each State or offshore area adjacent to a State in which it conducted such activities and to include employment, production, and capital expenditures data at the county level. Firms which supplied contract services for oil and gas field operations or for mining establishments were required to submit one report covering all such activities in the United States and to include information on receipts for services by State and county. These consolidated reports were then allocated to county establishments based on the data reported at the county level.

Use of Administrative Records

From a mailout universe of 36,000 mining establishments, approximately 11,000 small single establishment companies were not mailed a questionnaire. For these establishments, some employment, payroll, and receipts data were obtained from the administrative records of other agencies. Selection of the small establishment nonmail cases was done on an industry-by-industry basis, and a variable cutoff was used to determine those establishments for which administrative records were to be used in place of a census report. This information was then used in conjunction with industry averages to estimate the statistics for administrative-record and nonresponse establishments. The value of shipments and receipts and cost of supplies were not distributed among specific products and supplies for these establishments, but were included in the product and supply "not specified by kind" categories. Overall, establishments for which administrative-record data were used accounted for less than 3 percent of total value of shipments.

Value of Shipments and Receipts for the Industry Compared to Value of Product Shipments

Figures for value of shipments and receipts represent the total shipments and receipts for all establishments classified

in this industry and include products primary to the industry, products classified as primary in other industries but secondary to this industry, and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments represents products classified as primary to this industry that were shipped by all mining and manufacturing establishments, regardless of their industry classification.

EXPLANATION OF TERMS

All employees—This item includes all full-time and part-time employees on the payrolls of operating mineral establishments for any part of the pay period including the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacation during these pay periods. Officers of the corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employee" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average of those for the midmonth payroll periods of March, May, August, and November.

Payroll—This item includes all forms of compensation; such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if it is a corporation; it excludes payments to the proprietor or partners, if it is an unincorporated concern. Respondents were told that in reporting they could follow the definition of payroll used for calculating the Federal withholding tax.

Production-, development-, and exploration-worker hours—This item represents all hours that production, development, and exploration workers worked both on active days during which there was production or development work and on inactive days when only guards, inspectors, repairpersons, and other maintenance persons were on duty. It includes all hours worked or paid for at the mining operations, except hours for paid vacations, holidays, or sick leave, when the employee was not at the establishment. Included are actual overtime hours, not straight-time equivalent hours. Hours of working proprietors or partners are excluded.

Cost of supplies used, purchased machinery installed, etc.—This cost includes supplies, minerals received for preparation, and purchased machinery installed, fuels and electric energy used, contract work done by others, and cost of products bought and resold without further processing. It includes charges to both the current and capital accounts. It also includes the cost of items used during 1982, whether they were purchased, withdrawn from inventories, or received from other establishments of the company. Supplies and equipment used in mine development, plant expansion, and capitalized repairs, which are chargeable to fixed assets accounts, were included, as were supplies furnished without charge to contractors for

use at the mining operation and supplies sold to employees for use at the establishment. No data on such costs as advertising, insurance, telephone, and research and consulting services of other establishments; or on overhead costs, such as depreciation charges, rent, interest, and royalties were included in this item. For selected supplies and fuels and for electric energy, both quantity and cost data were requested. The cost data refer to direct charges actually paid or payable (after discounts) for items used during the year. Freight charges and other direct charges, incurred by the establishment in acquiring the item, are included. Where the company's records did not show actual amounts used, they were asked to approximate use by adding purchases (or receipts) during the year to beginning inventory and subtracting ending inventory.

Specific supplies used and minerals prepared—In addition to the total cost of supplies used and purchased machinery installed, etc., which every establishment was required to report, information was also collected on the consumption of major supplies used in mining. These inquiries were restricted to supplies which were important parts of the cost of production, exploration, and development of a particular industry and for which cost information was available from the firms' records.

On report forms for almost all mineral industries, except the contract services industries, a uniform inquiry was included on minerals prepared at the reported establishments. Figures were obtained on minerals prepared from three sources: (1) crude minerals mined at the establishment (quantity); (2) crude minerals received from others (quantity and cost); and (3) crude minerals received for preparation on a custom or toll basis (quantity and estimated value).

Establishments consuming less than a specified amount (usually \$25,000) were not requested to report separately the cost of a supply. Also, the cost of supplies for small establishments for which administrative records were used was estimated as "not specified by kind."

Specific fuels used and stocks on hand—This item includes the quantity and cost of fuels used in mining. For most industries, every establishment was required to report separate quantity and cost figures for purchased coal, distillate fuel oil, residual fuel oil, gas, and gasoline, and a cost figure for "other fuels," as shown in table 4b. The cost of fuels for small establishments for which administrative records were used were imputed as "not specified by kind."

In addition, figures for stocks of purchased fuels on hand at the end of the year were reported for the first time in 1982. Every establishment was required to report the total quantity of unexpended fuel it had on hand, including emergency reserves, at the end of the year. Excluded are fuels to be used as feedstocks or raw materials.

Value added by mining—This measure of mining activity is derived by subtracting the total cost of supplies used, purchased machinery installed, etc., from the sum of the value of shipments and receipts (mining products plus receipts for services rendered) and total capital expenditures.

This statistic avoids the duplication in value of shipments and receipts, which results from the use of products of some establishments as supplies, energy sources, or materials by others. Moreover, it provides a measure of value added, not only in mineral production, but also in the development of mineral properties. For these reasons, it is considered to be the best value measure for comparing the relative economic importance of mining among industries and geographic areas.

Value of shipments and receipts—This item includes the values, f.o.b. mine, well, or plant (exclusive of freight and taxes), of all primary and secondary products shipped, as well as all miscellaneous receipts such as receipts for contract work performed for others, installation and repair, sale of scrap, and sale of products bought and resold without further processing. Included are all items produced by the establishments and sold, transferred to other plants of the same company, or shipped on consignment.

In the case of multiunit companies, the firm was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value; i.e., including not only the direct costs of production, but also a reasonable proportion of "all other costs" (including company overhead) and profit.

For industry and industry group totals, some duplication is introduced by the inclusion of materials transferred from one establishment to another for mineral preparation. Wherever value of shipments and receipts is shown without further specification, it represents gross shipments.

Shipments of individual products—In the 1982 Census of Mineral Industries, information was collected on the output of about 200 individual mineral product items. In general, the figures of the 1982 and 1977 mineral censuses were confined to separate totals for each crude and each prepared mineral. Where significant, separate shipments figures were also obtained for crude minerals going to preparation plants and those going to consumers.

Figures were collected on both quantity and value of shipments. Shipments included commercial shipments and transfers of products to other operations of the same company. For products which are used to a significant extent within the same establishment for power or heat, and for minerals mined and prepared in the same establishment, total production or separate data on production for such uses were collected. Typically, production was also collected for products for which there are usually significant differences between the total production and total shipments as a result of stock changes.

For service industries, the amount received or due for services performed during 1982 was collected as a measure of output. For mine operators who also perform services, the amount received for such services was added to the total value of products shipped to determine total value of shipments and receipts for each establishment.

Capital expenditures—This item covers expenditures made during the year for development and exploration of mineral properties, for construction, and for purchased machinery chargeable to fixed assets accounts of the mineral establishment. They are the type for which depreciation, depletion, or Office of Minerals Exploration accounts are ordinarily maintained. Capital expenditures during 1982 were to be determined as "additions completed during the year plus construction in progress at the end of the year minus construction in progress at the beginning of the year." Reported capital expenditures were to include work done by contract, as well as by the mine forces. Expenditures for machinery and equipment were to include those made for replacement purposes, as well as those for additions to capacity. Excluded from these expenditures were costs of maintenance and repairs charged as current operating expense and expenditures for land and mineral rights.

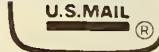
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